

Notice of Allowability

Application No.

10/623,249

Examiner

Nghia M. Doan

Applicant(s)

BHUSHAN ET AL.

Art Unit

2825

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Application filed on 07/18/2003 and Applicant Argument filed on 12/23/2005.
2. ☒ The allowed claim(s) is/are 1-31.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

1. Responsive to communication application 10/623,249 filed on 07/18/2003 and Applicant Argument filed on 12/23/2005, claims 1-31 are pending.

Claims 1, 3, 19, 30 and 31 have been amended.

Response to Arguments

2. Applicant's arguments, see pages 11-14, filed 12/23/2005, with respect to claims 1-31 have been fully considered and are persuasive. The claim rejection of last office action has been withdrawn.

Allowable Subject Matter

3. Claims 1-31 are allowed.

4. The following is an examiner's statement of reasons for allowance: although the prior art of record disclose determining characteristics of metal oxide semiconductor (MOS) device, taking claim 19, exemplary, the prior art of record does not teach or fairly suggest an apparatus, comprising: a plurality of ring oscillators, the plurality of ring oscillators located within a predetermined distance of each other, each ring oscillator comprising a plurality of coupled stages, wherein: each of the plurality of coupled stages for a first given ring oscillator comprises an inverter having at least one first MOS device having a first designed gate length; each of the plurality of coupled stages for a second given ring oscillator comprises an inverter substantially identical to the inverters in the coupled stages of the first given ring oscillator and coupled to at least one second MOS device having a second designed gate length; each of the plurality of coupled stages for

a third given ring oscillator comprises an inverter substantially identical to the inverters in the coupled stages of the first given ring oscillator and coupled to at least one third MOS device having a third designed gate length; the second and third designed gate lengths are different; and one of the second and third designed gate lengths is substantially equal to the first designed gate length..

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Back et al. (US 6,493,851) discloses a method for identifying a cause of poor correlation between simulation model and actual measured performance of the integrated circuit component of using a ring oscillator with different channel length. Motoyama (US 6,825,732) discloses a ring oscillator can be adjusted the drive strength between inverting stage associated with different gate length.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nghia M. Doan whose telephone number is 571-272-5973. The examiner can normally be reached on 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Chiang can be reached on 571-272-7483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nghia M. Doan
Patent Examiner
AU 2825
NMD

STACY A. WHITMORE
PRIMARY EXAMINER

A handwritten signature in black ink, appearing to read 'Stacy A. Whitmore', is written over the printed name and title.